APPENDIX C

Meadow Valley Wildlife Area Site Descriptions

Site descriptions for the 12 Primary Sites that occur within the Meadow Valley Wildlife Area. See the main text for more details on site selection, methods, and definitions.

Table of Sites

MV01. MEADOW VALLEY FLOWAGE

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Juneau
USGS 7.5' Quadrangle:	Finley, Mather
Town-Range-Section:	T20N-R2E, sections 2-11
	T21N-R2E, sections 31-36
Size:	5853

Description of Site

This large wetland complex consists of a five mile long (east-west) by 2 mile wide (north-south) peatland that was probably originally a mixture of boggy meadow (Central Poor Fen), shrub swamp, and tamarack swamp. The hydrology has been altered by an extensive system of ditches and dikes. Impounded areas of open water occur. The historically dominant natural communities now exist only as scattered, usually small remnants. The impoundments contain beds of emergent and submergent aquatic macrophytes and seasonal mudflats. A number of rare aquatic plants are present, including Torrey's bulrush, Farwell's water-milfoil, water-thread pondweed, and prickly hornwort. If these species were present historically, they must have occupied small pools of open water within peatlands or perhaps occurred on the margins of the small ponds that are very sparsely distributed across the central sands landscape.

Among the common emergent aquatic plants are bulrushes, rushes, bur-reeds, spikerushes, three-way sedge, and arrowhead. Floating-leaved aquatic species include both yellow and white pond-lilies, and watershield. The boggy meadow remnants are dominated by sphagnum mosses, tussock and narrow-leaved sedges, bog birch, cotton-grasses (*Eriophorum* spp.), willows, and hardhack. Slightly elevated "islands" within the wetlands support stands of young jack pine, aspen, white pine, paper birch, red maple, and black or Hill's oak.

The site is managed primarily for waterfowl production, but has also benefited rare or otherwise sensitive animals such as Sedge Wren, American Bittern, and Northern Harrier. There are two track roads on the dike berms. A small tamarack swamp occurs in the northwestern corner of the site, which is adjacent to the Hog Island Pine-Oak Forest upland site described elsewhere in this report. To the southeast is the Kingston Pines and Peatlands site.

Significance of Site

The size of this site is significant, but its hydrology, and therefore the natural communities present, has been significantly disrupted. The site currently supports many rare or uncommon plant and animal species.

Management Considerations

No modifications to the existing management regime are recommended at this time. Because of the extent of the hydrologic alterations and the number of sensitive species whose habitat needs are currently met, restoration of the former natural communities that occurred on the site isn't a priority consideration now. Periodic monitoring for vegetation change and, especially, the presence of invasive species is an important consideration.

MV01 - Meadow Valley Flowage Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Botaurus lentiginosus	american bittern	1999	S3B,SZN	G4	SC/M	
Chlidonias niger	black tern	1999	S3B,SZN	G4	SC/M	
Cygnus buccinator	trumpeter swan	1999	S1B,SZN	G4	END	
Gavia immer	common loon	1999	S3S4B,SZN	G5	SC/M	
Haliaeetus leucocephalus	bald eagle	1992	S2N,S3B	G4	SC/FL	LT,PD
Hemileuca sp 3	Midwestern fen buckmoth	1996	S3S4	G3G4Q	SC/N	
Ixobrychus exilis	least bittern	1999	S3B,SZN	G5	SC/M	
Plants						
Bartonia virginica	yellow screwstem	1998	S3	G5	SC	
Carex folliculata	long sedge	1997	S3	G4G5	SC	
Ceratophyllum echinatum	prickly hornwort	1998	S2	G4?	SC	
Myriophyllum farwellii	Farwell's water-milfoil	1997	S3	G5	SC	
Polygala cruciata	crossleaf milkwort	1998	S3	G5	SC	
Potamogeton confervoides	algae-like pondweed	1975	S2	G4	THR	
Potamogeton diversifolius	water-thread pondweed	1997	S2	G5	SC	
Scirpus torreyi	Torrey's bulrush	1998	S2S3	G5?	SC	
Strophostyles leiosperma	small-flowered woolly bean	1997	S2	G5	SC	
Thelypteris simulata	bog fern	1997	S3	G4G5	SC	
Communities						
Northern Dry-Mesic Forest	Northern Dry-Mesic Forest	1997	S3	G4	NA	
Northern Wet Forest	Northern Wet Forest	1981	S4	G4	NA	
Southern Sedge Meadow	Southern Sedge Meadow	1981	S3	G4	NA	
Tamarack (Poor) Swamp	Tamarack (Poor) Swamp	1997	S3	G4	NA	

MV02. KINGSTON PINES AND PEATLANDS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Juneau
USGS 7.5' Quadrangle:	Mather
Town-Range-Section:	T20N-R2E, sections 7, 8, 17-20, 29, and 30
Size:	2120

Description of Site

This site contains two mapped communities; an open boggy meadow (Central Poor Fen) and a Central Sands Pine-Oak Forest. Both occur on nearly flat to rolling sandy terrain between Big Lake to the southwest and Kingston Flowage to the northeast. The forest is quite dry, composed of medium-size second-growth red pine, white pine, and black (or Hill's) oak. Old stumps and charred snags are present. The pines and oaks both exhibit good regeneration. The shrub layer is variable in density and consists of brambles (*Rubus* spp.), huckleberry, American hazelnut, and prairie willow. The low shrub and herb strata support early blueberry, whorled loosestrife, bracken fern, and locally extensive sods of sedges. There is also a component of low ericaceous shrubs other than blueberry, and occasional prairie grasses and forbs, including wild lupine. The site includes a small wet-mesic forest of swamp hardwoods and white pine-red maple along one of the few free-flowing stretches of the East Branch of Beaver Creek.

The conifer-dominated areas support many northern birds and mammals, including Northern Raven, Hermit Thrush, Red-breasted Nuthatch, Pine, Yellow-rumped, and Canada warblers, fisher and porcupine. There are also fairly recent records (late 1970s-early 1980s) for Northern Goshawk and Saw-whet Owl.

The site is partly bisected by a two-track access road leading to Kingston Flowage. The open wetlands are dominated by sphagnum mosses and sedges. A small tamarack swamp is also present. The wetlands need additional survey work.

The major land uses in the vicinity are commercial forestry, cranberry production, waterfowl production, and recreation. Vast wetlands (Bear Bluff Peatlands) occur to the west.

Significance of Site

The site is extensive, has mature patches of dry upland conifer forest, no significant exotics, and excellent animal diversity. A number of rare or otherwise sensitive species have been documented here. This site may represent the best opportunity in the eastern part of the study area to manage an extensive pine-dominated forest. The wetlands have been less affected by hydrologic alterations than many others nearby, and the harvest of sphagnum moss no longer occurs here.

Management Considerations

Major considerations include the maintenance of an extensive upland conifer-dominated forest, allowing old-growth attributes to develop in some stands, and maintaining intact ecotones between lowlands and uplands. Protection of the free-flowing portion of Beaver Creek and the adjoining forest is a rare opportunity in this landscape and also warrants major consideration. Barrens management at this site is less important than at other locations in the landscape although, in appropriate areas, small patches might be maintained or enhanced.

MV02 - Kingston Pines and Peatlands Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
Animals					
Accipiter gentilis	northern goshawk	1981	S2N,S2B	G5	SC/M
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR
Lanius ludovicianus	loggerhead shrike	2001	S1B,SZN	G4	END
Plants					
Bartonia virginica	yellow screwstem	1998	S3	G5	SC
Carex cumulata	clustered sedge	1997	S2	G4?	SC
Polygala cruciata	crossleaf milkwort	1997	S3	G5	SC
Thelypteris simulata	bog fern	1997	S3	G4G5	SC
Communities					
Central Poor Fen	Central Poor Fen	1998	S3		NA
Central Sands Pine-Oak Forest	Central Sands Pine-Oak Forest	1998	S3	G3	NA
Northern Dry-Mesic Forest	Northern Dry-Mesic Forest	1979	S3	G4	NA
Northern Wet Forest	Northern Wet Forest	1979	S4	G4	NA
Other					
Bird Rookery	Bird Rookery	1985	SU		SC

MV03. SCOTT FLOWAGE PEATLANDS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
Counties:	Jackson, Monroe
USGS 7.5' Quadrangle:	Mather, Warrens East
Town-Range-Section:	T19N-R1E, sections 1-5, and 8-11
	T20N-R1E, sections 33-36
Size:	2811

Description of Site

This large peatland complex is located north of Monroe County Trunk Highway E and includes the Scott Flowage. The primary plant community is a boggy meadow (Central Poor Fen on organic soils of the Dawson Peat and Loxley Mucky-Peat series. Lacustrine sands underlie the peat and muck soils. The open wetland is dominated by sphagnum mosses, narrow-leaved and tussock sedges, and hardhack. Other common plant species are woolgrass, several species of cotton-grasses, chokeberry, bog birch, and various willow species. Cranberries and leatherleaf represent the acid-loving ericaceous shrubs. The eastern portion of the wetland is less disturbed than the western part, and is interspersed with upland "islands" and peninsulas of second-growth xeric forest of oak, aspen, and pine. Scattered trees or small islands of oak, pines, red maple, and aspen all occur throughout the peatland. The western part of the site has been greatly altered by historical ditching, followed by diking and impoundment (Scott Flowage). At the flowage edges the boggy mat grades into an emergent marsh composed of such species as beggars-tick, manna grass, Small's spikerush, arrowhead, bog goldenrod, water horehound, and grass-leaved goldenrod. Near the peatland margins there are small stands of swamp conifers, mostly tamarack-dominated, with lesser amounts of black spruce.

Animals utilizing the peatlands include Sedge Wren, Sandhill Crane, Ring-necked Duck, Green-winged Teal, Northern Harrier, Sharp-shinned Hawk, and Blanding's Turtle.

The site is bordered on the northeast, north, and southwest by more disturbed, mossed, ditched, and diked peatlands. Several of the rare animals documented here in the 1980s, for example Black Tern and Henslow's Sparrow, could not be relocated during the current survey project.

The surrounding landscape is utilized for timber production, recreation, and cranberry cultivation. The federally endangered Karner blue butterfly occupies restricted, linear barrens remnants along the access road south of the flowage.

Significance of Site

This large peatland is managed as part of Meadow Valley Wildlife Area. The US Fish and Wildlife Service is the owner, but the site is managed by the WDNR. Many rare or otherwise sensitive animals are resident here. Surrounding uplands could be managed as either extensive forest or barrens, or a mixture of both.

Management Considerations

Protection of site hydrology is a key management issue. No specific management changes are recommended at this time, though commercial moss harvest should be deferred, at least until more data on harvest impacts are available to managers. Additional survey work on birds and selected invertebrates, e.g., lepidopterans, is highly desirable. Periodic monitoring for the presence of invasive plant species is also needed.

MV03 - Scott Flowage Peatlands Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Aeshna verticalis	green-striped darner	1982	S3	G5	SC/N	
Ammodramus leconteii	Le conte's sparrow	1999	S2B,SZN	G4	SC/M	
Botaurus lentiginosus	American bittern	1999	S3B,SZN	G4	SC/M	
Cicindela patruela huberi	a tiger beetle	1975	S3	G3T2	SC/N	
Circus cyaneus	Northern harrier	1999	S2N,S3B	G5	SC/M	
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR	
Lycaeides melissa samuelis	Karner blue butterfly	1992	S2S3	G5T2	SC/FL	LE
Lycaena epixanthe	Bog copper	1998	S2S3	G4G5	SC/N	
Plants						
Thelypteris simulata	Bog fern	1997	S3	G4G5	SC	
Communities						
Central Poor Fen	Central Poor Fen	1997	S3		NA	
Northern Wet Forest	Northern Wet Forest	1982	S4	G4	NA	
Open Bog	Open Bog	1982	S4	G5	NA	

MV04. MATHER TAMARACKS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
Counties:	Monroe, Juneau
USGS 7.5' Quadrangle:	Mather, Shennington
Town-Range-Section:	T19N-R1E, sections 1, 12, and 13
	T19N-R2E, sections 7, 8, 17, and 18
Size:	959

Description of Site

This tamarack swamp straddles State Highway 173 and a powerline right-of-way on the Monroe-Juneau County line. The substrate is sphagnum peat over sand and loamy sand. Much of the forest is apparently young, composed of relatively small trees. Open patches of boggy fen (Central Poor Fen) dominated by sphagnum mosses, narrow-leaved sedges, and hardhack are treated as inclusions.

The wetland margins grade into a fringe of White Pine-Red Maple Swamp where there are larger (to 10" in diameter) tamaracks, white pine, and paper birches in the overstory. Common understory shrubs include tag alder, huckleberry, winterberry holly, bog holly, early blueberry, and chokeberry. The groundlayer is composed of sphagnum mosses, skunk cabbage, Canada bluejoint grass, tussock sedge, swamp dewberry, and cinnamon fern. The best developed tamarack forest occurs in this area. At least 3 rare plants are present: bog fern, long sedge, and crossleaf milkwort. Detailed animal surveys have not been conducted, but the site supports Nashville Warbler (common), White-throated Sparrow, Golden-winged Warbler, Sharp-shinned Hawk, Hermit Thrush, and snowshoe hare, all "northern" species that are approaching their southern range limits in central Wisconsin. Primary land use is recreation (hunting). The site is embedded in gently rolling sandy terrain that is utilized for timber production. Local cover types include oak (mostly Hill's and/or black), pine plantations, and some aspen. Extensively ditched open peatlands occur immediately to the east of the site.

Significance of Site

The site contains a good representative of a central Wisconsin tamarack swamp and supports a number of rare or otherwise notable plant and animal species.

Management Considerations

Maintenance of site hydrology is the paramount management consideration, though care needs to be taken when managing the adjoining upland forest to avoid excessive forest fragmentation and exposure of the shallow-rooted swamp conifers to excessive wind impacts.

MV04 - Mather Tamaracks Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Aeshna verticalis	green-striped darner	1982	S3	G5	SC/N	
Clemmys insculpta	wood turtle	1985	S3	G4	THR	
Erynnis persius	persius dusky wing	1979	S2	G5	SC/N	
Lycaeides melissa samuelis	Karner blue butterfly	1982	S2S3	G5T2	SC/FL	LE
Plants						
Carex folliculata	long sedge	1997	S3	G4G5	SC	

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Polygala cruciata	crossleaf milkwort	1997	S3	G5	SC	
Thelypteris simulata	bog fern	1997	S3	G4G5	SC	
Utricularia geminiscapa	hidden-fruited bladderwort	1998	S3	G4G5	SC	
Communities						
Tamarack (Poor) Swamp	Tamarack (Poor) Swamp	1997	S3	G4	NA	

MV05. NORWAY RIDGE ROAD PINES AND PEATLANDS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Monroe
USGS 7.5' Quadrangle:	Shennington
Town-Range-Section:	T19N-R1E, sections 13, 14, and 23
Size:	293

Description of Site

This complex consists of a pair of communities near the western edge of the bed of extinct Glacial Lake Wisconsin. The upland ridge (Norway Ridge) supports a xeric forest of mixed oak and pine. To the south is a boggy meadow on sedge and moss peat. The site is bisected from southwest to northeast by State Highway 173, and is embedded in an area utilized principally for timber products and recreation.

The upland forest is on Boone and Tarr Sands and is composed mostly of oaks with scattered jack, white, and red pine in the canopy, plus occasional bigtooth aspen, paper birch, and red maple. The sapling layer is sparse to moderate in density, consisting mostly of black and white oaks, red maple, and white pine. The shrub layer is low and sparse, with huckleberry, early blueberry, and American hazelnut the most common species. Characteristic herbs include Penn sedge, bracken fern, Canada mayflower, and big-leaved aster. Characteristic resident birds include Scarlet Tanager, Red-eyed and Yellow-throated Vireos, Great-crested Flycatcher, Eastern Wood Pewee, Whip-poor-will, and Ovenbird.

A few barrens/sand prairie species are present, such as flowering spurge, lupine, purple milkwort, and stiff coreopsis. These plants and others typically found in more open habitats are quite common on the margins of Norway Ridge Road, where a population of the federally endangered Karner blue butterfly is present.

The peatland to the south is an open, wet, acidic meadow dominated by wire-leaved sedges, bluejoint, and, in some places, sphagnum mosses. Hardhack is common, but ericads are scarce or absent except on drier hummocks and along upland margins where leatherleaf and large-fruited cranberry are common. Bog birch and tamarack are also characteristic of the hummocks, while on the wetland margins tall shrubs such as chokeberry, tag alder, and winterberry holly are prevalent. Several rare plant species are present. Sedge Wren, Golden-winged Warbler, and Nashville Warbler are among the resident birds.

Wetland hydrology is relatively intact, though the presence of Hwy. 173 and associated maintenance activities have had localized impacts. There has been no ditching or recent mossing in this wetland.

Significance of Site

The peatland is significant in that virtually all other large wetlands in the vicinity have been ditched, diked, or mossed. With the exception of a stand bordering Hwy. 173, the upland oak-pine forest has had no recent disturbance, is mature, relatively large, and supports species generally associated with older closed canopy forest.

Management Considerations

Maintenance of site hydrology is the key consideration for the wetland communities. Fire suppression has influenced the structure of the upland forest, but the current availability of successional stages, patch sizes, and composition in the local landscape should be carefully assessed at a landscape level before making future silvicultural decisions. Most of the forests in the area are young, frequently logged, and occur in small patches. There is a need for better representation of large patches of older forest somewhere in this landscape.

A portion of this site would be appropriate to manage to create or maintain barrens conditions. Prescribed fire should be considered as a tool compatible with certain silvicultural treatments if a barrens community is deemed worthy of restoration here. The basis of selecting specific areas at which to attempt this should be based on the diversity and abundance of prairie flora and associated animals, especially rare invertebrates. Currently, the most sensitive barrens species are associated mostly with roadsides and utility corridors, where they are vulnerable to damage or destruction. During a recent logging operation along Norway Ridge Road, considerable damage occurred to the prairie flora occupying the shoulder. In addition, the disturbance appears to have fostered the spread of the highly invasive spotted knapweed to areas formerly dominated by native prairie species (including wild lupine).

MV05 - Norway Ridge Road Pines and Peatlands Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Callophrys irus	frosted elfin	1987	S1	G3	THR	
Cicindela patruela huberi	a tiger beetle	1999	S3	G3T2	SC/N	
Lycaeides melissa samuelis	Karner blue butterfly	1987	S2S3	G5T2	SC/FL	LE
Plants						
Carex folliculata	long sedge	1997	S3	G4G5	SC	
Polygala cruciata	crossleaf milkwort	1997	S3	G5	SC	
Thelypteris simulata	bog fern	1997	S3	G4G5	SC	
Communities						
central sands pine-oak forest	central sands pine-oak forest	1997	S3	G3	NA	
tamarack (poor) swamp	tamarack (poor) swamp	1997	S3	G4	NA	

MV06. NORWAY RIDGE ROAD POWERLINE ROW

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Monroe
USGS 7.5' Quadrangle:	Shennington
Town-Range-Section:	T19N-R1E, sections 24-26, 35, and 36
	T19N-R2E, sections 19
Size:	349

Description of Site

The site encompasses several corridors, including a road, powerline right-of-way, and several ditches that support rare species. The power line site supports rare barrens lepidoptera (e.g., Karners), and the shrubby wetlands support resident Golden-winged Warblers.

Significance of Site

Several rare plants occur here. Most of this site is highly disturbed and altered, but there is a small but hydrologically intact occurrence of an open peatland.

Management Considerations

Monitor site conditions and the population of twining screwstem, an Atlantic Coastal Plain species known from only one other location in Wisconsin. Protect undisturbed wetlands from further hydrologic manipulations, monitor vegetation changes, and allow stands of natural red and white pine in the vicinity to age and develop mature forest characteristics. Older forests with intact canopies are needed to provide habitat for many species that occur in this landscape but do not thrive in small patches of younger forest.

MV06 - Norway Ridge Road Powerline ROW Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
Plants					
Bartonia paniculata	Twining screwstem	1998	S1	G5	SC
Bartonia virginica	Yellow screwstem	1998	S3	G5	SC
Polygala cruciata	Crossleaf milkwort	1998	S3	G5	SC
Communities					
Central Poor Fen	Central Poor Fen	1994	S3		NA

MV07. ATWOOD AVENUE PEATLANDS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Monroe
USGS 7.5' Quadrangle:	Wyeville
Town-Range-Section:	T19N-R1E, sections 17, 19, 20, and 21
Size:	492

Description of Site

The site is centered around a second-growth White Pine-Red Maple Swamp that grades into a mixed composition dry forest of pine-oak-aspen on the upslope side and into an open acid peatland on the downslope side. The White Pine-Red Maple Swamp includes patches of older forest that are developing important structural features such as large trees, tip-ups, snags, and coarse woody debris. The sparse shrub layer is composed primarily of winterberry holly and speckled alder. Both white pine and red maple are reproducing within the stand. Frequent understory species include skunk cabbage, goldthread, Canada mayflower, starflower, and swamp dewberry. Several rare plant species are present. The major soil type is Dawson Peat.

The open peatland is composed of sphagnum mosses, sedges, hardhack, and willows. The upland forest of pine and oak is managed commercially, with stumps evident throughout. Newson Loamy Sand is the main upland soil type. A large cranberry farm occurs just to the south of the site.

Significance of Site

This site contains Monroe County's most intact occurrence of the regionally restricted white pine-red maple swamp community. Several rare plant species are present. Golden-winged warblers have been recorded during the breeding season in the shrubby margins of the open peatland.

Management Considerations

Important considerations include incorporating the development of forest attributes such as high canopy closure, large trees, snags, and protection of site hydrology into forest management plans. If feasible, effective forest block size should be increased. A breeding bird survey has the potential to yield records of rare or uncommon species and is recommended for the future.

MV07 - Atwood Ave Peatlands Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
Plants					
Carex cumulata	clustered sedge	1997	S2	G4?	SC
Carex folliculata	long sedge	1997	S3	G4G5	SC
Thelypteris simulata	bog fern	1997	S3	G4G5	SC
Communities					
white pine-red maple swamp	white pine-red maple swamp	1997	S2	G3G4	NA

MV08. MONROE COUNTY FLOWAGE

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Monroe
USGS 7.5' Quadrangle:	Shennington, Wyeville
Town-Range-Section:	T19N-R1E, sections 33 and 34
Size:	900

Description of Site

This large artificial impoundment is located in the bed of extinct Glacial Lake Wisconsin, and was created in the 1950s and 1960s by plugging a ditch and dike system dug earlier in the century in an unsuccessful attempt to drain the site for agricultural use. Soils include Palms Muck, Dawson Peat, and Wautoma Sand. The flora is diverse and includes the following emergent aquatics: cat-tail, bur-reed, manna-grass, three-way sedge, spikerushes, arrowhead, and bulrushes. Floating-leaved aquatics include water-shield, various pondweed species, and yellow and white water-lilies. Adjoining some of the flowage's shorelines, principally the eastern and northern sides, there are remnant peatlands that may be described as central poor fen inclusions. These are dominated by sphagnum mosses, tussock sedge, narrow-leaved sedges, woolgrass, and hardhack, and grade into slender willow shrub-carrs in some places, and small fragmented patches of jack and red pines, red maple, and huckleberry in other places. Rare plants documented here include crossleaf milkwort and forked hornwort.

Monroe County Flowage is part of the Meadow Valley Wildlife Area, which is owned by the US Fish and Wildlife Service and managed by the Wisconsin DNR. The site is set in a rolling, mostly forested landscape of low sandy hills that is managed for timber production and recreation. Numerous peatlands (poor fen, tamarack swamp, and shrub swamp) occupy low spots between the ridges. Commercial harvest of sphagnum mosses was formerly widespread in the more open peatlands. As is the typical condition of central sand wetlands, hydrology has been greatly altered by a maze of ditches and dikes.

Significance of Site

Emergent marshes are far less uncommon than other wetland types in this part of the state. Monroe County Flowage contains one of the region's larger examples. Overall diversity of aquatic macrophytes is high, several rare plants are present, and the site provides suitable breeding habitat for nesting Black Tern, American Bittern, Ring-necked Duck, Common Loon, Green-winged Teal, Marsh and Sedge Wrens, Northern Harrier and Blanding's Turtle. Bald Eagle and Osprey frequently forage here.

Management Considerations

Apart from periodic monitoring for birds, herptiles, rare plants, and the presence of invasive species, no additional management recommendations are offered at this time. The Bureau of Endangered Resources should be contacted if flowage drawdowns are contemplated to ensure that guidelines to protect sensitive species are incorporated into the management plans.

MV08 - Monroe County Flowage Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
Animals					
Chlidonias niger	black tern	1999	S3B,SZN	G4	SC/M
Emydoidea blandingii	Blanding's turtle	1991	S3	G4	THR
Plants					
Ceratophyllum echinatum	prickly hornwort	1998	S2	G4?	SC
Polygala cruciata	crossleaf milkwort	1998	S3	G5	SC
Communities					
emergent aquatic	emergent aquatic	1998	S4	G4	NA
northern sedge meadow	northern sedge meadow	1982	S3	G4	NA

MV09. DANDY CREEK SWAMP

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Monroe
USGS 7.5' Quadrangle:	Shennington
Town-Range-Section:	T18N-R1E, sections 1
	T19N-R1E, sections 35, 36
Size:	211

Description of Site

This site, on a slightly elevated area within a sedge-willow wetland in the bed of extinct Glacial Lake Wisconsin, supports a swampy forest composed mostly of Hill's oak and white pine, up to ca 20" in diameter. There are smaller, but mature, oaks of four other species (bur, white, swamp white, and red) in the canopy, plus a few red pines, red maples, aspens, and ashes. The sapling layer is composed of oaks and red maple; the tall shrub layer consists primarily of American hazelnut and gray dogwood. The herb layer is rich for the Meadow Valley landscape, and includes interrupted and cinnamon ferns, wood anemone, big-leaved aster, sessile-flowered bellwort, and wild geranium. Classification of this forest is uncertain, as both wet-mesic and dry-mesic elements are present. The soils are poorly drained Newson Loamy Sands. The area has been periodically logged and adjacent wetlands ditched. Adjacent areas are used for recreation, timber production, and wildlife habitat. There is private property to the south.

Significance of Site

Although this forest remnant is small, the site somewhat fragmented, roads are nearby, and the hydrology has been altered, it is nevertheless the only "hardwood swamp" of this composition mapped within the Black River State Forest / Meadow Valley Landscape.

Management Considerations

More information on stand history is needed. For now, we suggest the deferral of commercial logging until this and any similar sites can be more fully assessed and we have a better understanding of site hydrology.

MV09 - Dandy Creek Swamp Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
Animals					
Emydoidea Blandingii	Blanding's turtle	1991	S3	G4	THR
Communities					
Hardwood swamp	hardwood swamp	1997	S3	G4	NA

MV10. BLUEBERRY TRAIL COMPLEX

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Monroe, Juneau
USGS 7.5' Quadrangle:	Shennington
Town-Range-Section:	T18N-R1E, sections 1
	T18N-R2E, sections 5 and 6
	T19N-R1E, sections 25 and 36
	T19N-R2E, sections 29-32
Size:	1686

Description of Site

This complex encompasses the floodplain of Beaver Creek, and lands to the north and west that include a mosaic of saturated peatland communities such as Central Poor Fen, Tamarack Swamp, and White Pine – Red Maple Swamp. The 197-acre floodplain forest community is about 1.5 miles long and 0.2-0.3 miles wide, and is composed of river birch, various oaks, bigtooth and trembling aspens, red maple, and white pine, The shrub and herb layer are depauperate. In low areas this forest grades into Sedge Meadow, Alder Thicket, Central Poor Fen, willow swamp (shrub-carr), or Tamarack Swamp. Small patches of these types are treated as inclusions within the floodplain forest. Beaver Creek itself is deeply entrenched in sand and has steep banks. Just to the north of the creek and adjoining hardwood-dominated bottomlands is a 71-acre wet-mesic forest dominated by white pine and red maple. Canopy associates include oaks, aspens, and tamarack. This forest has developed on somewhat poorly drained sands and mucks of the Meehan-Newson and Newson-Dawson Complexes. Common understory species include cinnamon fern, sedges, skunk cabbage, huckleberry, bluebead lily, and bracken fern. A layer of living sphagnum mosses overlies shallow muck or peat in many areas within this forest.

To the north of this stand are several separate polygons that together comprise an 81-acre central poor fen on saturated peat of the Meehan-Dawson Complex. Common species here are sphagnum mosses, narrow-leaved sedges, bluejoint, and hardhack. Scattered small trees of tamarack, jack pine, and red maple are present. Rare plant species occurring in this complex include bog fern, long sedge, crossleaf milkwort, yellow screwstem, and Virginia meadow-beauty. Uplands to the north of Beaver Creek are vegetated with second-growth forest of oaks, aspens, pines, and red maple.

Blueberry Trail, a two-track road, traverses the upland parts of the site from west to east on the north side of Beaver Creek. Cranberry farms occur about one mile southeast of the site, and a large impoundment on Beaver Creek (Eagle Nest Flowage) is located about 1.5 mile east (upstream) from the site.

Significance of Site

This site is significant for its stretch of free-flowing, meandering stream, and relatively undisturbed stands of floodplain forest, White Pine-Red Maple Swamp, Tamarack Swamp, and open bog/poor fen. Most small streams in the Meadow Valley landscape have been ditched, straightened, or impounded. The communities to the north of the creek are embedded in a more or less natural landscape with intact ecological gradients. A number of rare species were documented here, including Red-Shouldered Hawk, Cerulean Warbler, Golden-Winged Warbler, and meadow beauty.

Management Considerations

Options for a special management and protection designation should be thoroughly explored with the Juneau County and Meadow Valley managers. This site contains a relatively intact complex of both rare and representative natural features, some of which occur at few other sites in central Wisconsin. Maintenance of a core area of older, closed canopy forest is important to maintain sensitive forest wildlife and provide for under-represented forest successional stages.

MV10 - Blueberry Trail Complex Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Clemmys insculpta	wood turtle	1985	S3	G4	THR	
Dendroica cerulea	cerulean warbler	1999	S2S3B,SZN	G4	THR	
Emydoidea blandingii	Blanding's turtle	1997	S3	G4	THR	
Lycaeides melissa samuelis	Karner blue butterfly	1998	S2S3	G5T2	SC/FL	LE
Seiurus motacilla	louisiana waterthrush	1999	S3B,SZN	G5	SC/M	
Spharagemon marmorata	northern marbled locust	1998	S2S3	G5	SC/N	
Plants						
Bartonia virginica	yellow screwstem	1998	S3	G5	SC	
Carex folliculata	long sedge	1998	S3	G4G5	SC	
Juncus marginatus	grassleaf rush	1959	S2	G5	SC	
Polygala cruciata	crossleaf milkwort	1998	S3	G5	SC	
Potamogeton pulcher	spotted pondweed	1938	S1	G5	END	
Rhexia virginica	Virginia meadow-beauty	2001	S2	G5	SC	
Thelypteris simulata	bog fern	1998	S3	G4G5	SC	
Communities						
Central Poor Fen	Central Poor Fen	1998	S3		NA	
Floodplain Forest	Floodplain Forest	1997	S3	G3?	NA	
Northern Dry Forest	Northern Dry Forest	1982	S3	G3?	NA	
Northern Dry-mesic Forest	Northern Dry-mesic Forest	1982	S3	G4	NA	
Northern Sedge Meadow	Northern Sedge Meadow	1982	S3	G4	NA	
Northern Wet Forest	Northern Wet Forest	1982	S4	G4	NA	
White Pine-Red Maple Swamp	White Pine-Red Maple Swamp	1998	S2	G3G4	NA	

MV11. COUNTY TRUNK HIGHWAY H BARRENS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Juneau
USGS 7.5' Quadrangle:	Mather, Shennington
Town-Range-Section:	T19N-R2E, sections 5, 8, 9, 16, 17, 20, 21, 28, and 29
Size:	874

Description of Site

This large area of disturbed xeric forest/pine barrens borders Juneau County Trunk Highway H. Currently the vegetation can be characterized as young shrubby forest with relatively high canopy closure except where recent logging has created small gaps and openings. The site is a nearly level upland on Friendship Sand in the bed of extinct Glacial Lake Wisconsin. Jack pine and Hill's/black oak dominate the forest, with most trees in the 1"-5" d.b.h. size class and occasional individuals reaching 11" d.b.h. A few scattered red and white pines are present. The sapling layer consists of mostly Hill's/black oak, but jack pine saplings are locally abundant. Shrubs are moderately dense, with early blueberry, huckleberry, and sweet fern common. In many places Penn sedge dominates the depauperate understory; in other areas prairie plants such as big and little bluestem, goldenrods, and asters are frequent. The site and surrounding areas are used for timber production, recreation, and wildlife management. Karner blue butterflies occur with their food plant, wild lupine, along some of the more open prairie roadsides and in other openings.

Significance of Site

Though this site is heavily overgrown with trees and shrubs due to a prolonged period of fire suppression, there is some potential for management to maintain important components of the barrens community, such as the Karner blue butterfly and frosted elfin.

Management Considerations

Periodic controlled burns are recommended in appropriate areas to maintain or restore barrens composition and structure. Timber sales can also be used to aid in the maintenance of the more open conditions needed by the most sensitive barrens species.

MV11 - County Trunk Highway H Barrens Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Callophrys irus	frosted elfin	1988	S1	G3	THR	
Clemmys insculpta	wood turtle	1985	S3	G4	THR	
Erynnis persius	persius dusky wing	1990	S2	G5	SC/N	
Lycaeides melissa samuelis	Karner blue butterfly	1998	S2S3	G5T2	SC/FL	LE
Plants						
Rhexia virginica	Virginia meadow-beauty	1932	S2	G5	SC	
Utricularia geminiscapa	hidden-fruited bladderwort	1998	S3	G4G5	SC	
Communities						
Pine barrens	pine barrens	1997	S2	G2	NA	

MV12. SUK AND CERNEY PEATLANDS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
County:	Juneau
USGS 7.5' Quadrangle:	Cutler, Shennington
Town-Range-Section:	T18N-R2E, sections 1-4 and 9-15
	T18N-R3E, sections 6-8, 17, and 18
	T19N-R2E, sections 25-27 and 33-36
	T19N-R3E, sections 31
Size:	9270

Description of Site

This vast near-level saturated peatland in the bed of glacial Lake Wisconsin is a complex mosaic of Central Poor Fen (the unforested areas) and young xeric forests of oak and pine on low, sandy "islands" and "peninsulas." These patchwork-patterned uplands are the remnants of dunes formed thousands of years ago following the natural drainage of now extinct Glacial Lake Wisconsin. The dominant plants in the open wetlands are narrow-leaved sedges (especially *Carex oligosperma*) and Canada bluejoint grass. Other common species are hardhack, cotton-grasses, and bog birch. The wetlands generally have the aspect of a sedge meadow, though some areas support a deep layer of sphagnum mosses, ericaceous shrubs, and insectivorous plants and should be considered Poor Fen or Open Bog. Pitcher plants, orchids, and a more diverse complement of sedges occupy these more acidic sphagnous peatland patches. Overall, in the areas surveyed, sphagnum mosses make up less than 50% of the vegetation mat.

Though detailed animal surveys have not yet been conducted throughout this site, the residents include Sedge Wren, Nashville Warbler, Golden-winged Warbler, Northern Harrier, Sharp-shinned Hawk, and Southern Bog Lemming.

There are scattered individuals (typically very small) or copses of tamarack (and rarely, black spruce). The wetland margins tend to be occupied by a zone of tall shrubs composed of speckled alder, winterberry holly, bog holly, chokeberry, bog birch, and willows. The sandy islands and ridges often support dense stands of jack pine or black/Hill's oak over a Penn sedge-dominated groundlayer. Huckleberry, early blueberry, bracken fern, and a few barrens-associated plants are also typically present.

The surrounding landscape is used for commercial forestry (aspen and jack pine), game species management, and recreation. There has been some ditching on the margins of the site and these ditches largely form its perimeter; but, overall, the hydrology appears relatively intact. An east-west running town road forms the site's southern border. There is a small impoundment or flowage on its eastern margin.

Significance of Site

This site is significant for its large size, relatively intact hydrology, complex mosaic of communities representative of this ecoregion, and the rare or otherwise important species that it supports.

Management Considerations

Management potential exists to promote the development and maintenance of Pine Barrens and sand prairie communities adjacent to and even within the site. Periodic prescribed burning is an appropriate management strategy to consider for at least some of the uplands, as much of this ecosystem complex is well-adapted to, and ultimately dependent, on fire. Avoiding widespread disruption of site hydrology is important, and we are

recommending that a significant portion of the site receive consideration for special management designation to protect the natural communities present, as well as the natural processes that support them.

MV12 - Suk and Cerney Peatlands Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Aeshna verticalis	Green-striped darner	1998	S3	G5	SC/N	
Cicindela patruela huberi	a tiger beetle	1998	S3	G3T2	SC/N	
Clemmys insculpta	Wood turtle	1985	S3	G4	THR	
Lycaeides melissa samuelis	Karner blue butterfly	1999	S2S3	G5T2	SC/FL	LE
Somatochlora incurvata	warpaint emerald	1998	S2	G4	END	
Spharagemon marmorata	northern marbled locust	1998	S2S3	G5	SC/N	
Williamsonia fletcheri	Ebony bog haunter	1999	S3S4	G3G4	SC/N	
Williamsonia lintneri	Ringed boghaunter	1999	S2S3	G3	SC/N	
Plants						
Ceratophyllum echinatum	prickly hornwort	1938	S2	G4?	SC	
Rhexia virginica	Virginia meadow-beauty	1974	S2	G5	SC	
Scirpus torreyi	Torrey's bulrush	1997	S2S3	G5?	SC	
Communities						
central poor fen	central poor fen	1994	S3		NA	
northern sedge meadow	northern sedge meadow	1981	S3	G4	NA	
pine barrens	pine barrens	1979	S2	G2	NA	
shrub-carr	Shrub-carr	1981	S4	G5	NA	